# VSC7438

## 32 Gbps Carrier Ethernet Switch with ViSAA™, VeriTime™, MPLS-TP, and L3 Routing Support

Microsemi's Carrier Ethernet switch family offers the highest performance, market-ready solution for MEF CE 2.0 service delivery.

The VSC7438 Serval-2™ device targets IP Edge demarcation and access equipment to deliver Enterprise and mobile backhaul. VSC7438 is based on Virtualized Service Aware Architecture (ViSAA™), a silicon implementation that offers an unmatched level of Service Edge and Carrier Ethernet Networking features. ViSAA achieves wirespeed performance for even the most feature-rich Carrier Ethernet (CE) services. VSC7438 also integrates VeriTime™, Microsemi's patent-pending timing technology that delivers the industry's most accurate IEEE 1588v2 timing implementation.

The VSC7438 Carrier Ethernet switch contains twelve 10/100/1000 Mbps SGMII/SerDes ports, three 10/100/1000 Mbps QSGMII ports, and two 10 Gbps XAUI/SFI ports. VSC7438 provides a rich set of Carrier Ethernet switching features such as hierarchical QoS, hardware-based OAM (Ethernet and MPLS/MPLS-TP) and SAM, protection switching, and Synchronous Ethernet. Using provider bridging (Q-in-Q) and MPLS/MPLS-TP technology, VSC7438 delivers MEF CE 2.0 EVCs. The Versatile Content Aware Process (VCAP™) architecture is scalable and flexible for secure applications. It features advanced TCAM classification in both ingress and egress. Per-EVC features include a rich set of statistics, OAM for end-to-end performance monitoring, and dual-rate policing and shaping.

VSC7438 supports IPv4/IPv6 Layer-3 (L3) routing with up to 4K IPv4 (1K IPv6) unicast LPM entries and 2K IPv4(512 IPv6) L3 multicast groups. L3 security features include source guard and reverse path forwarding tasks.
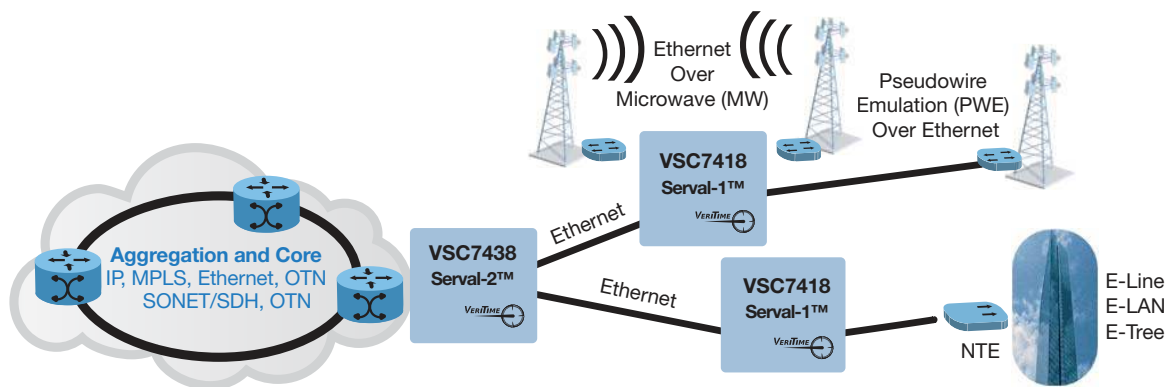
VSC7438 supports Microsemi's application programming interface for easy integration with third-party application software. The device also supports Microsemi's CEServices application software, dramatically reducing customer time-to-market.

## Highlights

- Virtualized Service Aware Architecture (ViSAA™)
- MPLS/MPLS-TP and Layer-3 routing support
- MEF UNI and NNI functionality
- Hardware-based Ethernet OAM, performance monitoring, and service activation measurement (SAM)
- Network demarcation
- Hierarchical QoS priority for queuing and subscriber separation
- Service protection (linear, ring)
- Integrated timing: VeriTime™, SyncE

## Applications

- Wireless and mobile backhaul
- Ethernet/MPLS demarcation
- Network Interface Device

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## Features

- 2 × 10 GbE ports
- 12 × 1 GbE SGMII/SerDes ports (up to 12 × 2.5 GbE)
- 12 × 1 GbE (3× QSGMII) + 2 × 10 GbE
- PCIe for control/status register access
- Integrated shared packet memory
- Fully nonblocking wire-speed switching performance for all frame sizes
- 8 QoS classes with thousands of H-QoS queues
- Energy Efficient Ethernet (EEE)
- Priority-based flow control
- Integrated MIPS-24KEc CPU with DDR3 SDRAM controller

## Layer-2 Switching

- 802.1Q VLAN switch with 32K MACs and 4K VLANs
- Classify and modify up to three VLAN tags
- IPv4/IPv6 multicast
- Policing with storm control and MC/BC protection
- RSTP and MSTP support
- Hardware-based and software-based learning
- Link aggregation (IEEE 802.3ad)
- Independent and shared VLAN learning (IVL, SVL)
- Jumbo frame support

## Layer-3 Routing

- 4K/1K IPv4/IPv6 table entries (LPM and hosts)
- 2K/512 IPv4/IPv6 (S, G, V) or (*, G, V)
- 128 router legs
- Simultaneous L3 routing with Provider Bridging and MPLS/MPLS-TP service switching

## VeriTime™ Features

- L2 IEEE 1588v2
- Boundary clock and transparent clock

## ViSAA™ and Carrier Ethernet Features

- Provider bridging (Q-in-Q) and MPLS/MPLS-TP
- Linear and ring protection switching
- MEF CE 2.0 ready: 8 COS EVCs with per-EVC dual-rate policing and shaping, queueing, and statistics
- Advanced security and per-service classification available through multistage TCAM engines
- Hardware-based Ethernet and MPLS-TP OAM: Up-MEPs and Down-MEPs, Four layers of nested MEPs
- Hardware-based Y.1564 service activation test
- L1 Synchronous Ethernet

## Key Specifications

- 27 mm × 27 mm FCBGA
- Low power dissipation
- Operating temperature –40 °C to 125 °C

## Related Products

Visit www.microsemi.com for information about these related products:

- VSC7460 Jaguar-1™ and VSC7462 LynX-1™ 24-port and 12-port Carrier Ethernet switches with VeriTime™
- VSC7418 Serval-1™ 11-port Carrier Ethernet switch with MPLS-TP and VeriTime™
- VSC7416 Serval-Lite™ 6-port Carrier Ethernet switch with MPLS-TP Support and VeriTime™
- Microsemi Unified API and Microsemi CEServices application software

Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California and has approximately 4,800 employees globally. Learn more at www.microsemi.com.